CLAIMS

1. A method for measuring the level of phospho-tau (181) in a sample comprising:
   a) detecting phospho-tau in a sample; and
   b) using a phospho-peptide as a standard to measure the level of phospho-tau (181); wherein the phospho-peptide is between 15 and 100 amino acids in length, wherein the phospho-peptide is liable to form an immunological complex with monoclonal antibody HT7 and monoclonal antibody AT270, and wherein the phospho-peptide comprises:
      - the minimal epitope of HT 7: ProProGlyGlnLys (SEQ ID NO 1); and
      - the minimal epitope of AT270: ProProAlaProLysThr(p)Pro (SEQ ID NO 2).

2. The method of claim 1, wherein said phospho-peptide comprises the following sequence:
ProArgGlyAlaAlaProProGlyGlnLysGlyGlnAlaAsnAlaThrArgIle
ProAlaLysThrProProAlaProLysThr(p)ProProSerSerGlyGlu (SEQ ID NO 3)
or variant sequences thereof on the condition that they still bind to the HT7 and the AT270 monoclonal antibodies.

3. The method of claim 2 wherein the phospho-peptide comprises the sequence of SEQ ID NO:3.

4. The method of claim 2 wherein the phospho-peptide consists of the sequence of SEQ ID NO:3.

5. The method of claim 2 wherein the phospho-peptide is from 20 to 50 amino acid residues in length.

6. The method of claim 2 wherein the phospho-peptide is from 30 to 40 amino acid residues in length.

7. The method of claim 2 wherein the sample is a biological sample selected from the group consisting of: body fluid and brain extract.

8. The method of claim 2 wherein the body fluid is selected from the group consisting of blood, lymph, urine, and cerebrospinal fluid.

9. A diagnostic kit comprising a phospho-peptide wherein the phospho-peptide is between 15 and 100 amino acids in length, wherein the phospho-peptide is liable to form an immunological complex with monoclonal antibody HT7 and monoclonal antibody AT270, and wherein the phospho-peptide comprises:
(a) the minimal epitope of HT 7: ProProGlyGlnLys (SEQ ID NO 1); and
(b) the minimal epitope of AT270: ProProAlaProLysThr(p)Pro (SEQ ID NO 2).

10. The diagnostic kit of claim 9 wherein the phospho-peptide comprises the sequence:
ProArgGlyAlaAlaProProGlyGlnLysGlyGlnAlaAsnAlaThrArgIleProAlaLysThrP
roPro
AlaProLysThr(p)ProProSerSerGlyGlu (SEQ ID NO 3)
or variant sequences thereof on the condition that they still bind to the HT7 and the AT270 monoclonal antibodies.

11. The diagnostic kit of claim 9 wherein the phospho-peptide comprises the sequence of SEQ ID NO:3.

12. The diagnostic kit of claim 9 wherein the phospho-peptide consists of the sequence of SEQ ID NO:3.

13. The diagnostic kit of claim 9 wherein the phospho-peptide is from 20 to 50 amino acid residues in length.

14. The diagnostic kit of claim 9 wherein the phospho-peptide is from 30 to 40 amino acid residues in length.

15. A phospho-peptide comprising:

(a) the minimal epitope of HT 7: ProProGlyGlnLys (SEQ ID NO 1); and

(b) the minimal epitope of AT270: ProProAlaProLysThr(p)Pro (SEQ ID NO 2);

wherein the phospho-peptide is between 15 and 100 amino acids in length and wherein the phospho-peptide is liable to form an immunological complex with monoclonal antibody HT7 and monoclonal antibody AT270.

16. The phospho-peptide of claim 15 that comprises the sequence ProArgGlyAlaAlaProProGlyGlnLysGlyGlnAlaAsnAlaThrArgIleProAlaLysThrP

roPro

AlaProLysThr(p)ProProSerSerGlyGlu (SEQ ID NO 3)

or variant sequences thereof on the condition that they still bind to the HT7 and the AT270 monoclonal antibodies.

17. The phospho-peptide of claim 15 comprising the sequence of SEQ ID NO:3.

18. The phospho-peptide of claim 15 consisting of the sequence of SEQ ID NO:3.

19. The phospho-peptide of claim 15 that is from 20 to 50 amino acid residues in length.

20. The phospho-peptide of claim 15 that is from 30 to 40 amino acid residues in length.